

# Notice of Allowability

Application No.

10/650,397

Examiner

Anh Ly

Applicant(s)

BASS ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 01/18/2006.
2. ☒ The allowed claim(s) is/are 14-17 and 19-23 (renumbered as 1-9).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 08/28/03, 10/22/03 & 4/26/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material 1
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

JEAN M. CORRIELUS  
PRIMARY EXAMINER

### DETAILED ACTION

1. This Office Action is response to Applicants' AMENDMENT filed on 01/18/2006.

### EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Joscelyn G. Cockburn (Reg. No.: 27,069) via telephone @ (919) 543-9036 on MON. 03/20/2006.

The application has been amended as follows:

#### **Claim 14:**

14. (currently amended) A computer system comprising:  
a computer readable medium containing a plurality of data structures for finding a match for a variable length search key, said data structure including:  
a pattern ~~or key that is to be matched;~~  
a direct table ~~that~~ stores a first address location for a search tree;  
a plurality of pattern search control blocks ~~that each represent~~ wherein each  
pattern search control block represents a branch in the search tree; ~~and~~  
a plurality of leaves wherein each leaf is an address location for ~~the result of a~~  
~~search wherein said direct table is one of said plurality of data structures that is first~~

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~~accessed in conducting the search.~~ storing predefined information relative to said first pattern; and

a search tree engine to correlate the first pattern with information stored in selected ones of the plurality of data structures and forward the predefined information found in a said leaf included in the selected ones of the plurality of data structures if match occurs between the first pattern and a second pattern stored in said leaf wherein a format for the direct table includes at least one of the pattern search control block including a next pattern address points to a next pattern search control block, a leaf control block address points to one of the plurality of leaves, a next bit or bits to test and a direct leaf.

**Claim 15:**

15. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim 14,

**Claim 16:**

16. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim 15,

**Claim 17:**

17. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim 15,

**Claim 18:**

18. (cancelled) (cancel claim 9)

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**Claim 19:**

19. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim 14,

**Claim 20:**

20. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim 14,

**Claim 21:**

21. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim **14**,

**Claim 22:**

22. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim 14,

**Claim 23:**

23. (currently amended) **A computer system comprising** a computer medium containing a plurality of data structures for finding a match of claim 14,

3. Claim 18 has been cancelled.
4. Claims 14-17 and 19-23 are allowed.

### **Allowable Subject Matter**

5. The present application has been thoroughly reviewed. Upon searching a variety of databases, the examiner respectfully submits that claims 14-17 and 19-23 are allowed in light of the applicants' argument and in light of the prior arts of made record.

6. The following is an examiner's statement of reasons for allowance:

The claimed invention is directed to a computer system comprising a computer readable medium containing a plurality of data structures for finding a match for a variable length search key. A direct table is accessed and a tree is walkthrough pattern search control block until reaching a leaf. The data structure is used to store the pattern key and the related information in the tree is called a leaf. Each leaf corresponds to a single key that matches exactly with the pattern key and the pattern key is located in the direct table, it is called a direct leaf.

The closest prior arts, Brown of Pub. No.: US 200/0043602 teaches a method for searching a longest prefix match of a key or pattern in the search tree, the key or prefix match is the pattern search control blocks for searching pattern in the search tree and including a plurality of address location and nodes or leaves. While Angle et al. (hereinafter Angle) of 5,857,196 teaches data structure storing in the memory of computer system.

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In combination, Brown and Angle fail to teach "a direct table stores a first address location for a search tree and a plurality of pattern search control blocks wherein each pattern search control block represents a branch in the search tree."

These distinct features, in conjunction with all other limitations of the dependents and independent claims render claims 14-17 and 19-23 allowable.


7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

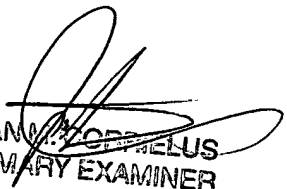
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### Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is (571) 272-4039 or via E-Mail: ANH.LY@USPTO.GOV or fax to **(571) 273-4039 (Examiner's fax number)**. The examiner can normally be reached on TUESDAY – THURSDAY from 8:30 AM – 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on (571) 272-4107 or **Primary Examiner Jean Corrielus (571) 272-4032**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Any response to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, or faxed to: **Central Fax Center: (571) 273-8300**

ANH LY   
MAR. 21<sup>st</sup>, 2006

  
JEAN CORRIELUS  
PRIMARY EXAMINER